Two-way tables

Grade 2 | Worked solutions

GCSE Statistics topic practice

1 The two-way table shows information about the pets owned by some Year 7 and Year 8 pupils.

	Cat	Dog	No pet	Total
Year 7	9	11	10	30
Year 8	7	8	13	28
Total	16	19	23	58

a. How many Year 8 pupils have a dog? (1)

b. How many pupils in total have a cat? (1)

c. How many more Year 8 pupils than Year 7 pupils have no pet? (1)

(3 marks)

a) Year 8 row, Dog column

8 pupils

b) Total row, Cat column

16 pupils

c) No pet column

13 − 10 = 3

a) 8 b) 16 c) 3

2 60 pupils in Year 9 each choose one activity for a school trip. The two-way table shows some information about their choices.

	Climbing	Kayaking	Archery	Total
Boys	12		7	28
Girls		14		
Total	20			60

a. Complete the two-way table. (3)

b. Write down the activity that was chosen by the most girls. (1)

(4 marks)

a) boys kayaking

28 − 12 − 7 = 9

girls climbing

20 − 12 = 8

girls total

60 − 28 = 32

girls archery

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$32 - 8 - 14 = 10$

kayaking total

$9 + 14 = 23$

archery total

$7 + 10 = 17$

check the totals

$20 + 23 + 17 = 60$

b) girls row is 8, 14, 10

14 is the highest, so kayaking

a) 9, 8, 10, 32, 23, 17 b) Kayaking

3 50 people went to see a film.

- 30 of the people were children. The rest were adults.
- 18 of the children had popcorn.
- 21 of the 50 people did not have popcorn.

	Popcorn	No popcorn	Total
Children			
Adults			
Total			50

a. Use this information to complete the two-way table. (3)

b. What fraction of the adults did not have popcorn? (1)

(4 marks)

a) adults

$50 - 30 = 20$

children with no popcorn

$30 - 18 = 12$

adults with no popcorn

$21 - 12 = 9$

adults with popcorn

$20 - 9 = 11$

popcorn total

$18 + 11 = 29$

check the totals

$29 + 21 = 50$

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b) 9 adults out of 20 had no popcorn

$\frac{9}{20}$

a) 18, 12, 30 and 11, 9, 20 and 29, 21 b) $\frac{9}{20}$

4 Tom asked 60 pupils how they travel to school. He put his results in this two-way table.

	Bus	Walk	Car	Total
Year 7	14	9	7	30
Year 8	11	13	6	30
Total	25	22	15	60

Tom has made a mistake. One of the numbers in the Total row is wrong.

a. Find the number that is wrong and write down what it should be. (2)

b. Write down the most common way the Year 8 pupils travel to school. (1)

c. In total, how many more pupils travel by bus than walk? (1)

(4 marks)

a) check each column total

$14 + 11 = 25$

$9 + 13 = 22$

$7 + 6 = 13$

The Car total should be 13, not 15

check

$25 + 22 + 13 = 60$

b) Year 8 row is 11, 13, 6

13 is the highest, so Walk

c) bus total take away walk total

$25 - 22 = 3$

a) 15 should be 13 b) Walk c) 3

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5 Asha records whether 100 trains at her local station are on time or late.

	On time	Late	Total
Morning	42	18	60
Afternoon	32	8	40
Total	74	26	100

a. Write down the number of afternoon trains that were on time. (1)

b. Work out the percentage of the morning trains that were late. (2)

c. Asha says, "A morning train is more likely to be late than an afternoon train."
Is Asha correct? You must show your working. (2)

(5 marks)

a) Afternoon row, On time column

32 trains

b) 18 late out of 60 morning trains

$\frac{18}{60} = \frac{3}{10}$

$\frac{3}{10} = 30\%$

30% of the morning trains were late

c) 8 late out of 40 afternoon trains

$\frac{8}{40} = \frac{1}{5}$

$\frac{1}{5} = 20\%$

$30\% > 20\%$

Asha is correct

a) 32 b) 30% c) Yes, 30% and 20%

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